

REMARKS/ARGUMENTS

Request for Supervisory Review

The present application, in being up for its third action, is desired of its prosecution to be concluded. In this respect, Applicant is respectfully requesting for review of the application by the Examiner's supervisor.

Claim Amendments

- Claims 1 and 5 are amended as shown in the attached sheet to improve readability and to place the claims in better form for appeal.

Reasons for Traverse

A) Applicant respectfully submits that a *prima facie* case of obviousness has not been properly established with regard to the pending claims. It is submitted that the manner in which the §103(a) rejection was arrived at is improper, and that the Examiner is relying on impermissible hindsight reasoning.

Summary of Claims and Rejections

- Claims 1 to 5 are pending in the present application.
- Claims 1 to 5 are rejected under 35 U.S.C. §103(a) over Silverbrook et al. (US 6,612,240) in view of McElfresh et al. (US 6,843,552).

Detailed Remarks

(A) Independent claim 1 is directed to a printhead assembly comprising at least two printhead integrated circuits. First and second power supplies are provided at opposite ends of the printhead assembly. A first group of electrical connectors is connected to the first power supply, and a second group of electrical connectors is connected to the second power supply. The first and second groups of electrical connectors connect with each other in a region between the opposite ends of the printhead assembly.

Independent claim 1 is rejected over the combination of Silverbrook et al. with McElfresh et al. The rejection acknowledges that Silverbrook et al. do not disclose power supplies provided at opposite ends of a printhead integrated circuit, but asserts that McElfresh et al. do. The rejection further asserts that the connector 124 and serial cable 122 of Silverbrook et al. can be used to transfer power, and there a combination of Silverbrook et al. and McElfresh et al. can be made to arrive at the claimed invention.

Applicant respectfully submits that a *prima facie* case of obviousness has not been properly established.

1. The main support for the §103(a) rejection lies in the Examiner's assertion that power can also be transferred via connector 124 and serial cable 122 and therefore, one would modify the allegedly power supplying connector 124 and serial cable 122 so as to be supplied from two power supplies provided at opposite ends as taught by McElfresh et al., while still having the connector 124 and serial cable 122 connected to each other intermediate the opposite ends as taught by Silverbrook et al.

In respect of the above, it is pointed out that the above assertion does not comply with the test for obviousness, and therefore the manner in which the §103(a) rejection was arrived at is improper. The question is whether the connector 124 and serial cable 122 of Silverbrook et al. do transfer power, and not whether they merely can. Applicant submits that the connector 124 and serial cable 122 of Silverbrook et al. do not transfer power, but instead transfer only data.

Applicant respectfully directs the Examiner's attention to the following portions of Silverbrook et al.:

- Col. 5, lines 34 - 36:
"The PCB's 108 and 110 communicate with each other via a serial cable 122. One of the PCB's 108, 110 is connected via a connector 124 to the USB circuit board 98."
- Col. 4, lines 30 - 31:
"A power connection port 66 is also supported on the ink coupling."
- Col. 4, lines 12 17:
"Each printer 10 communicates with its controller and with other printers in the stack 40 via a USB 2 connection 50...enabling the printers 10 to be daisy-chained together and to communicate with each other."

In view of the above disclosures of Silverbrook et al., Applicant submits that it is clear to one of ordinary skill in the art that the connector 124 and the serial cable 122 are used in Silverbrook to communicate data and not to transfer power. The terms "communicate" and "serial cable" by themselves, and even more so in the context as used by Silverbrook et al., is understood by those skilled in the art as referring and relevant to data signals, and not to power supplies.

Moreover, in view that Silverbrook et al. rely on a power connection port 66 separate from the USB port 52 makes it clear that power is not supplied through connector 124 and serial cable 122. Power is instead provided through power connection port 66.

The Examiner's assertion that the connector 124 and serial cable 122 of Silverbrook et al., because they are connected to a USB circuit board 98, can therefore supply power, is respectfully submitted to be untenable. The fact is that the connector 124 and serial cable 122 do not supply power. Their capability of doing so is not relevant.

For this reason, Applicant respectfully submits that a *prima facie* case of obviousness has not been properly established.

2. Further, it is maintained that neither Silverbrook et al. nor McElfresh et al. provide motivation to connect two power supplies provided at opposite ends of a printhead module in a location intermediate the opposite ends.

As previously submitted, the cited combination of references suggest only that:

- If two sets of conductors are connected to two separate supplies, the two sets of conductors are not connected to each other (McElfresh et al.); or
- If two sets of conductors are connected to each other, then they are connected at one end only (Silverbrook et al.).

Neither reference provides the motivation to connect two sets of conductors to two separate supplies and connect the two sets of conductors to each other. The Examiner has not provided a reason why Silverbrook et al. would be modified so as to have a power supply arrangement almost as taught by McElfresh et al., except that the power supplies are connected to each other (which McElfresh et al. do not do).

If one is adopting the power supply arrangement of McElfresh et al., why would one adopt almost every aspect of McElfresh et al. but stop short of fully adopting this arrangement such that the power supplies are connected together? No reason or motivation has been provided, and Applicant believes that the Examiner has relied on impermissible hindsight reasoning in arriving at this assertion.

3. With regard to the Examiner's contention that a USB connection can transfer both data and power, Applicant points out that a USB connection consists of 5 separate wires. They are VCC, Data+, Data-, ID, and GND.

It is widely recognized that just because a device is connected via USB does not necessitate the device being connected to all 5 wires of a USB connection. Examples of such devices include USB powered fans and mug warmers which are connected to VCC and GND but not to Data+ and Data-, and conversely, digital cameras which utilize Data+ and Data- to transfer data/images but which do not rely on VCC and GND for power as they have their own power supply.

The above explanation of USB is provided to further illustrate that just because the connector 124 is connected to a USB circuit board does not mean that power is being transferred through the connector 124 and serial cable 122.

4. The Examiner states on page 4 of the outstanding Office Action that:

"The motivation for doing so would have been to provide power in parallel from both ends of the printhead assembly to the printhead integrated circuits as taught by McElfresh [sic] et al. (FIG 5)."

Applicant points out that because the two power supplies of McElfresh et al. are not connected to each other, the two power supplies are not in fact connected in parallel. The two power supplies of McElfresh et al., in being separate from each other, are in fact simply two serial circuits.

To illustrate this point, Applicant points out that should, for example, electrical contacts 68 (Fig. 5) fail, power to the lower two printhead dies would be interrupted.

If the power supply arrangement of McElfresh et al. were one where the two power supplies were connected in parallel, failure of the electrical contacts 68 would result in the lower two printhead dies still receiving power from the electrical contacts 68'.

Therefore, the Examiner's motivation combine is also respectfully submitted to be untenable.

In summary, Applicant respectfully maintains that independent claim 1, and the claims dependent therefrom, are not obvious over the combination of Silverbrook et al. and

McElfresh et al. The reasoning relied upon by the Examiner to arrived at the §103(a) rejection is respectfully submitted to be in error. Further, there is no motivation for combining only some parts of McElfresh et al.'s power supply arrangement but not all of it.

The Examiner's further consideration of the application in light of the above remarks is earnestly sought.

Accordingly, it is submitted that the application is now in condition for allowance. Reconsideration and allowance of the application is courteously solicited.

Very respectfully,

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